

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE  
in its capacity as elected Office

|   |   |
|---|---|
| Date of mailing (day/month/year)<br>12 February 2001 (12.02.01)       |   |
| International application No.<br>PCT/GB00/02492                       | Applicant's or agent's file reference<br>WPP80883         |
| International filing date (day/month/year)<br>23 June 2000 (23.06.00) | Priority date (day/month/year)<br>23 June 1999 (23.06.99) |
| Applicant<br>FAULKNER, Roger  |   |

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
09 January 2001 (09.01.01)

☐ in a notice effecting later election filed with the International Bureau on:

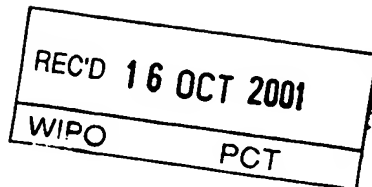
2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

|   |  |
|---|--|
| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland<br>Facsimile No.: (41-22) 740.14.35 | Authorized officer<br>S. Mafla<br>Telephone No.: (41-22) 338.83.38 |
|---|--|

# PATENT COOPERATION TREATY

## PCT



### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

|   |   |   |
|---|---|---|
| Applicant's or agent's file reference<br><b>WPP80883</b>  | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |   |
| International application No.<br><b>PCT/GB00/02492</b>  | International filing date (day/month/year)<br><b>23/06/2000</b>   | Priority date (day/month/year)<br><b>23/06/1999</b> |
| International Patent Classification (IPC) or national classification and IPC<br><b>H04B3/46</b> |   |   |
| Applicant<br><b>TERADYNE, INC. et al.</b>   |   |   |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
  
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
 

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:
 

- I    ☒ Basis of the report
  - II   ☐ Priority
  - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV   ☐ Lack of unity of invention
  - V    ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI   ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

|   |   |
|---|---|
| Date of submission of the demand<br><br><b>09/01/2001</b>   | Date of completion of this report<br><br><b>12.10.2001</b>                      |
| Name and mailing address of the international preliminary examining authority:<br><br>European Patent Office<br>D-80298 Munich<br>Tel. +49 89 2399 - 0 Tx: 523656 epmu d<br>Fax: +49 89 2399 - 4465 | Authorized officer<br><br><b>Ernst, C</b><br><br>Telephone No. +49 89 2399 8958 |



# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/02492

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

### Description, pages:

|        |                     |            |
|--------|---------------------|------------|
| 1,3-13 | as originally filed |            |
| 2      | with telefax of     | 19/09/2001 |

### Claims, No.:

|      |                     |
|------|---------------------|
| 1-37 | as originally filed |
|------|---------------------|

### Drawings, sheets:

|         |                       |
|---------|-----------------------|
| 1/6-6/6 | filed with the demand |
|---------|-----------------------|

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB00/02492

- ☐ the description,      pages:
- ☐ the claims,      Nos.:
- ☐ the drawings,      sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 29-37.

because:

☒ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):  
**see separate sheet**

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/02492

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## 1. Statement

|                               |      |        |        |
|-------------------------------|------|--------|--------|
| Novelty (N)                   | Yes: | Claims | 1 - 28 |
|                               | No:  | Claims |        |
| Inventive step (IS)           | Yes: | Claims | 1 - 28 |
|                               | No:  | Claims |        |
| Industrial applicability (IA) | Yes: | Claims | 1 - 28 |
|                               | No:  | Claims |        |

## 2. Citations and explanations **see separate sheet**

### Section III

#### Claims 29-37

Rule 6.3 (a) specifies that the definition of the matter for which protection is sought shall be in terms of **technical features** of the invention. Further Rule 6.3 (b) indicates that claims shall contain a statement indicating those **technical features** of the invention which are necessary ... and are part of the prior art (Rule 6.3 (b) (I)) and a characterizing portion stating concisely the **technical features** which, ..., it is desired to protect (Rule 6.3 (b) (ii)).

Per definition a method of marketing does not contain technical feature. Thus regarding claims 29 - 37 no opinion can be given in view of Article 33 PCT.

Further a method of marketing is not industrially applicable.

Moreover it is the normal function of the marketing department to offer the services of the company to the customers or chosen customers and to present information related to the company and its services.

Thus claims 29-37 relate to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iii) and (v) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(I) PCT).

### Section V

Reference is made to the following documents:

D1: ROEHRKASTEN W: 'MESSUNG VON XDSL-PARAMETERN'  
NACHRICHTENTECHNIK ELEKTRONIK, DE, VEB VERLAG TECHNIK.  
BERLIN, vol. 48, no. 2, 1 March 1998 (1998-03-01), pages 20-21,  
XP000752845 ISSN: 0323-4657

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/GB00/02492

D2: HEDLUND, ERIC; CULLINAN, TOM: 'DSL Loop Test' TELEPHONY, vol.  
235, no. 8, 24 August 1998 (1998-08-24), pages 48-52, XP002147002 USA

Document D1 and D2 seem to represent the closest prior art. D1 discloses a two end measurement and needs two separate employees. D2 mentions a single ended testing, but does not specify how such testing may be performed.

**Claim 1**

The steps and the structure of the steps as disclosed in claim 1 are not disclosed or do not derive obviously from the documents known from the present search report taken alone or in combination, in particular the step of performing single ended electrical measurements on the tip and ring wires with respect to ground by driving the tip and ring wires in the common mode could not be found in the cited prior art.

Thus claim 1 satisfies the requirements of Articles 33(2) and 33(3) PCT.

**Claims 2 to 13**

These dependent claims disclose further steps of the method according to claim 1. Thus they satisfy in combination with claim 1 the requirements of Article 33(2) and 33(3) PCT.

**Claim 14**

The statements regarding method claim 1 apply also to apparatus claim 14. Thus claim 14 satisfies the requirements of Article 33(2) and 33(3) PCT.

**Claims 15 to 23**

These dependent claims disclose further embodiments of the system according to claim 14. Thus they satisfy in combination with claim 14 the requirements of Article 33(2) and 33(3) PCT.

**Claim 24**

The statements regarding method claim 14 apply also to claim 24 related to a program storage device.

Thus claim 24 satisfies the requirements of Article 33(2) and 33(3) PCT.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/GB00/02492

Claims 25 to 28

These dependent claims disclose further embodiments or particularities of the system according to claim 24. Thus they satisfy in combination with claim 24 the requirements of Article 33(2) and 33(3) PCT.



different properties, the above-described mapping technique generally should take into account the properties of each segment to determine the total attenuation of the line.

5 TELCO's have also used direct electrical tests to determine the quality of POTS lines for data transmissions. Typically, such tests are manual and two-ended. Two-ended tests involve sending one employee to a customer's address or final distribution point and another employee to a switching station. The two employees coordinate their  
10 activities to perform direct electrical measurements on the customer line using hand-held devices. These two-ended measurements are substantially independent of the termination characteristics at the customer's address.

15 Nevertheless, these two-ended tests need two separate employees, which makes them labor intensive. The labor requirements affect the cost of such tests. The two-ended tests cost about \$150 per customer line. This cost is so high that a TELCO is often prohibited from using such tests for all customer lines.

20 The present invention is directed to overcoming, or at least reducing, one or more of the problems set forth above.

#### Summary of the Invention

25 In a first aspect, the invention provides a method of assessing the suitability of customer telephone lines for data transmission. The method includes selecting a telephone line via a test access of a switching station and electrically connecting the tip and ring wires adjacent one end of the selected line in a common mode configuration.  
30 The method also includes performing single-ended electrical measurements on the tip and ring wires with respect to ground by driving the tip and ring wires in the common mode.

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|  |   |  |
|--|---|--|
| Applicant's or agent's file reference<br><b>WPP80883</b> | <b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. |  |
| International application No.<br><b>PCT/GB 00/ 02492</b> | International filing date (day/month/year)<br><b>23/06/2000</b>   | (Earliest) Priority Date (day/month/year)<br><b>23/06/1999</b> |
| Applicant<br><b>TERADYNE, INC.</b>                       |   |  |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

### 1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/GB 00/02492

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04B3/46 H04M3/30

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04B H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

INSPEC, EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| X          | ROEHRKASTEN W: "MESSUNG VON XDSL-PARAMETERN"<br>NACHRICHTENTECHNIK ELEKTRONIK, DE, VEB<br>VERLAG TECHNIK. BERLIN,<br>vol. 48, no. 2, 1 March 1998 (1998-03-01),<br>pages 20-21, XP000752845<br>ISSN: 0323-4657 | 1, 29                 |
| A          | page 21, left-hand column - page 21, middle<br>column; figure 4  | 2, 14, 24             |
| X          | ZIEMANN, PETER: "ADSL line qualification tests" 'Online! , WANDEL & GOLTERMANN<br>XP002148948<br>Retrieved from the Internet: <URL:<br>http://www.wg.com/appnotes/adsltest.html><br>'retrieved on 2000-09-28!  | 1                     |
| A          | page 1-28<br>---<br>-/--   | 2, 14, 24             |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&amp;" document member of the same patent family

Date of the actual completion of the international search

2 October 2000

Date of mailing of the international search report

13/10/2000

Name and mailing address of the ISA

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Authorized officer

Cremer, J

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 00/02492

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| A          | BACKER, TODD; PUCKETT, RICK: "Telephone Access Network Measurements" / 1998 , TEKTRONIX XP002148949 paragraph '0017! ---  | 1,14,24               |
| A          | "IEEE Std 743-1995 IEEE Standard Equipment Requirements and Measurement Techniques for Analog Transmission Parameters for Telecommunications" 1996 , IEEE , US XP002148950 paragraph '10.6! --- | 1,14,24               |
| A          | US 5 699 402 A (BAUER FRANK R ET AL) 16 December 1997 (1997-12-16) cited in the application column 25, line 20 -column 29, line 53 ---  | 1,14,24               |
| X          | HEDLUND, ERIC; CULLINAN, TOM: "DSL Loop Test" TELEPHONY, vol. 235, no. 8, 24 August 1998 (1998-08-24), pages 48-52, XP002147002 USA the whole document -----                                    | 29,34                 |

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/02492

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---------------------|----------------------------|---------------------|
| US 5699402 A                              | 16-12-1997          | BR 9509197 A               | 21-10-1997          |
|   |                     | CZ 9700891 A               | 13-08-1997          |
|   |                     | EP 0783813 A               | 16-07-1997          |
|   |                     | SK 39797 A                 | 05-11-1997          |
|   |                     | WO 9610890 A               | 11-04-1996          |
|   |                     | US 6026145 A               | 15-02-2000          |
|   |                     | US 5870451 A               | 09-02-1999          |
| -----                                     |                     |                            |                     |